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Les territoires de montagne, fournisseurs mondiaux de ressources

Territorial Trajectories within a New Centre for the Globalised Mining Industry: the Andes of Northern Argentina

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Territorial Trajectories within a New Centre for the Globalised Mining Industry: the Andes of Northern Argentina

Marie Forget

AUTHOR'S NOTE

The author would like to thank the anonymous reviewers for the quality of their constructive remarks, which have helped improve the article.

- 1 The Andean cordillera was once the heart of the pre-Colombian empires and a central component of the Spanish Empire that succeeded them. It now forms part of many of the nations that emerged following the demise of the Spanish Empire. However, the way in which mountain territories are integrated into the national fabric differs from country to country. They occupy a central place in Colombia, as the country's polycentric urban structure is situated almost entirely in the Andes, as well as in Ecuador and Bolivia, whose capitals and main metropolises are in the cordillera, and in Chile and Peru, whose capitals are close to the Pacific coast but which exploit the cordillera's mineral reserves. On the other hand, the Andes are a peripheral region of Argentina and Venezuela. They lie on the countries' margins and are devoid of any large metropolises. Nevertheless, since the end of the 20th century, mountain territories have (again) taken central stage because of the large-scale exploitation of their mineral wealth, which makes the cordillera the focus of economic, political and social issues, both provincially and nationally.
- 2 Argentina was slower than most of its neighbours to capitalise on the region's mining dynamic, and the sector did not see significant expansion until the 1990s,¹ when the government, following the International Monetary Fund and World Bank's neoliberal prescriptions, passed new legislation to facilitate the extraction of minerals. For example,

the 1993 Mining Code gives significant competitive advantages to multinational and transnational mining companies. These policies have resulted in mountain territories being viewed as simple reservoirs of raw materials and enabled territories to profit from the developed world's insatiable demand for minerals to produce consumer products, especially in the field of new technologies (computing, energy etc.). The spatial division of labour between the world's centres (United States, Europe, East Asia) and peripheries is accentuated in Argentina by the country's federal structure. The competition between South American countries to attract direct foreign investment can also be seen within Argentina, as mountain areas, most of which are socio-economically disadvantaged, can use foreign investment to promote economic development, even if this development is minor and often short-term (Osatinsky, 2014). Under the constitutional reforms of 1994, provincial governments became the owners of the natural resources arising from and contained within their soil, and they were given total freedom, within the limits set by the national Mining Code,² to decide how to exploit these resources. Thus, provincial laws have been used to strengthen or weaken the national government's pro-mining stance (Boccardi et al., 2008, Denoël et al., 2014). The provinces negotiate concessions directly with mining companies, although the balance of power in these negotiations largely skews in favour of international and transnational companies and consortia, as they are the only entities capable of providing the finance needed to build "mining megaprojects" (Swampa et al., 2011).

- 3 Most mineral exploration and extraction in the mountain territories of Argentina takes place in archetypal rural areas with economies based on livestock farming. The indigenous populations of these areas are often vulnerable, and consequently it is difficult for local communities to oppose large mining projects. Nevertheless, in line with a trend seen across the continent, in recent years there has been a substantial increase in local protest movements, which consider the spread of mining activities a threat to the protesters' lifestyle and quality of life (OCMAL, 2015). Consequently, around 60 self-appointed assemblies have sprung up in small and medium-sized towns across the cordillera. The actions of these assemblies, on their own and in networks, have led to the emergence of a new paradigm that questions the prevailing view and attributes a wider role to mountain territories than just sources of the world's raw materials (Comelli, 2010).
- 4 Given that the Andean regions of Argentina are peripheral on a national scale but connected to the global system (Dolfuss, 1984) through transnational companies, to what extent does the selective exploitation of primary resources lead to different territorial trajectories? Are the Argentinian Andes solely a supplier to the world's markets, or does mining lead to local development? The present article addresses these questions by examining the spatial division of labour, the role assigned to the mountain territories of northwest Argentina and the territorial configurations that result from these choices. It also looks at the territorial development trajectories followed by three provinces by analysing how the interplay between actors affects territorial development choices.

The spatial division of labour: the place of mountain territories

- 5 Peru, Bolivia and Chile have been exploiting the precious minerals in their mountain territories since colonial times. By contrast, Argentina long neglected its peripheral mountain areas, despite attempts to integrate the Andes into the national territory when

the borders between Bolivia, Chile and Argentina were drawn, and again in the 1940s. A border treaty (1899) signed during Julio A. Roca's first term as president included eastern Puna within Argentina (*Territorio Nacional de los Andes*), with San Antonio de los Cobres, one of the country's few mining towns, as its capital. In 1904, the *Territorio Nacional de los Andes* was divided into four states that were incorporated into existing provinces in 1943³ in order to attract new settlers to areas presented as virgin and having infinite potential (Delgado, 2008). Despite these measures, Argentina's mountain areas were never truly integrated into the country's fabric and remained on the periphery, poor and sparsely populated. At the same time, development of the Pampas and its integration into the national fabric ensured that agriculture and ranching played a fundamental role in the country's development.

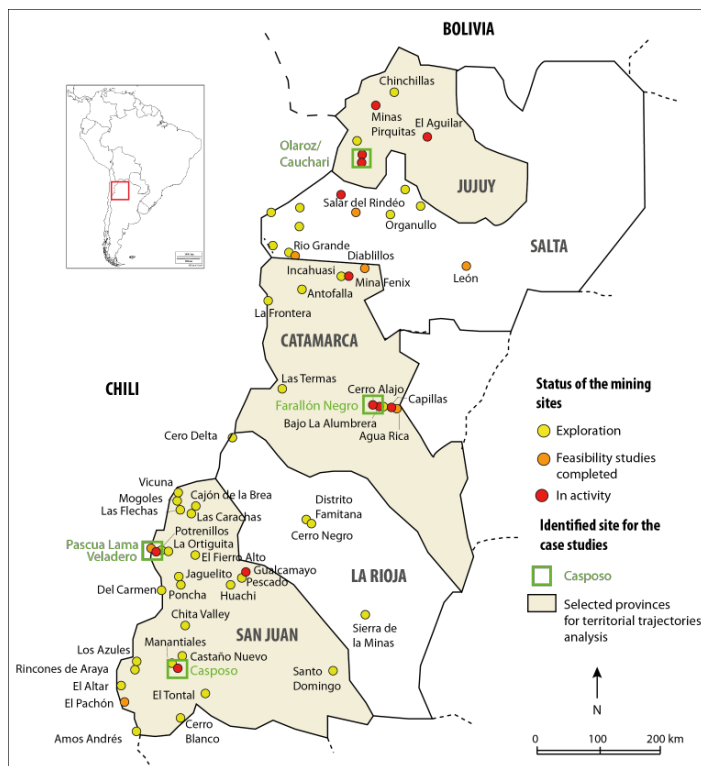
The decision to develop mining

- 6 Argentina's mining industry has undergone massive growth since the 2000s, largely thanks to the provisions of the 1993 Mining Investment Act, which set up an advantageous regime for foreign investment⁴ that helped to facilitate the development of large, opencast mining operations, called *megaminería*. This type of operation led to mountain territories being viewed almost exclusively as reservoirs of raw materials, ripe for intensive mining. The mining sector may be very new, but, despite the spread of socio-environmental protest movements across the continent, it has been difficult for the existing territorial economy and identity to resist its impact.
- 7 In fact, the industry has grown exponentially over recent years with the number of mining operations increasing from fewer than 20 in 2002 to more than 600 in 2011, and the value of mineral exports increasing from \$3 billion to \$16 billion over the same period (fig. 1). Thirteen provinces have mining operations on different scales, supported by the Argentinian government's "National Mining Plan", which was drawn up in 2003 in order to turn mining into a motor and model of economic growth. This highly advantageous legal and political framework led to an expansion in the number and size of mining projects (Forget et al., 2014). By world standards, Argentina remains a small producer of minerals, but only 25% of its reserves have been explored, and investors consider the country to have great potential.
- 8 Nevertheless, the ownership of natural resources has become the subject of intense debate and the root of numerous conflicts. The "federalisation" of natural resources began under the last military dictatorship (1976–83) and was bolstered by subsequent neoliberal policies (1990–2001) that are now being called into question (Nacif, 2012). Between 2004, when the Mining Plan came into effect, and 2007, when Nestor Kirchner was elected president, the national government's position was clearly pro-mining (Comelli et al., 2010), although provincial legislatures had the power to reinforce or attenuate this position (Boccardi et al., 2008, Denoël et al., 2014). The Kirchner government (2003–07) underlined the importance of mining by appointing a dedicated secretary of state and removing the requirement for earnings from mineral exports to be reinvested in Argentina (Decree No. 753/04). Cristina Fernández de Kirchner reaffirmed this position following her election in 2007, although she also introduced a floating tax on exports (of between 3% and 5%), as for the production of soya (Comelli, 2010). In addition, her government changed the state's position with respect to transnational companies by renationalising former state enterprises that had been privatised during the neoliberal

period of the 1990s and, starting in 2011, by introducing a series of measures to keep currency in the country (Saguier, 2014).

- 9 The move towards an “extractivist” model and the “re-primarisation” of resources, originally promoted by the national government, is now being followed by provincial governments. Following a change in the politico-economic situation across Latin America that led to the election of left-wing governments in many countries, including Argentina, the government tried to limit the power of transnational corporations. However, despite the debate over the merits of managing natural resources for the national good, attempts to reaffirm the power of the state have been controversial because the provinces have the sole right to grant mining concessions. The provinces are against the federalisation of resources, because they argue that it is a neoliberal approach that unduly favours transnational corporations, while the government maintains that nationalising mining companies, as was done to the oil company YPF in the 1990s, would allow the equitable distribution of wealth between all the country’s provinces and re-adjust the balance of power between private and public entities.
- 10 Companies from around 30 different countries have invested in Argentina’s mining industry, but more than half of this investment has come from North America.⁵ Although investment by (public and private) Argentinian organisations has been far from negligible (14%), the dominance of investment by Canadian (43%), Australian (13%) and North American (8%) companies and the fact that the vast majority of the minerals extracted are exported raises the question of North–South relations (Szablowski, 2007, Alimonda, 2011). The prospection and extraction of gold (33%), silver (21%) and copper (19%) account for three-quarters of the sums invested in mining projects, but projects to mine lithium are developing rapidly.

Fig 1. Mining operations in northwest Argentina and the sites of our case studies



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- 11 According to the Mines Secretariat, mining provided over half a million jobs in 2010; however, these figures contrast greatly with those published by Argentina's national statistics bureau (INDEC), which give an average of just under 20,000 jobs. Civil bodies opposed to the development of mining often highlight these figures to show that *megaminería* require huge amounts of capital but generate very little employment (Colectivo Voces de Alerta, 2011). This "extractivist" model (Gudynas, 2012) of economic development is characterised by the exploitation of large quantities of natural resources, which then become commodities that are exported.⁶ The spatial division of labour in the mining industry and the government's neoliberal reforms have put Argentina's Andean territories at the heart of a global development model that shapes political and economic relations on all scales (Favaro *et al.*, 2010, Ferrer, 2008).

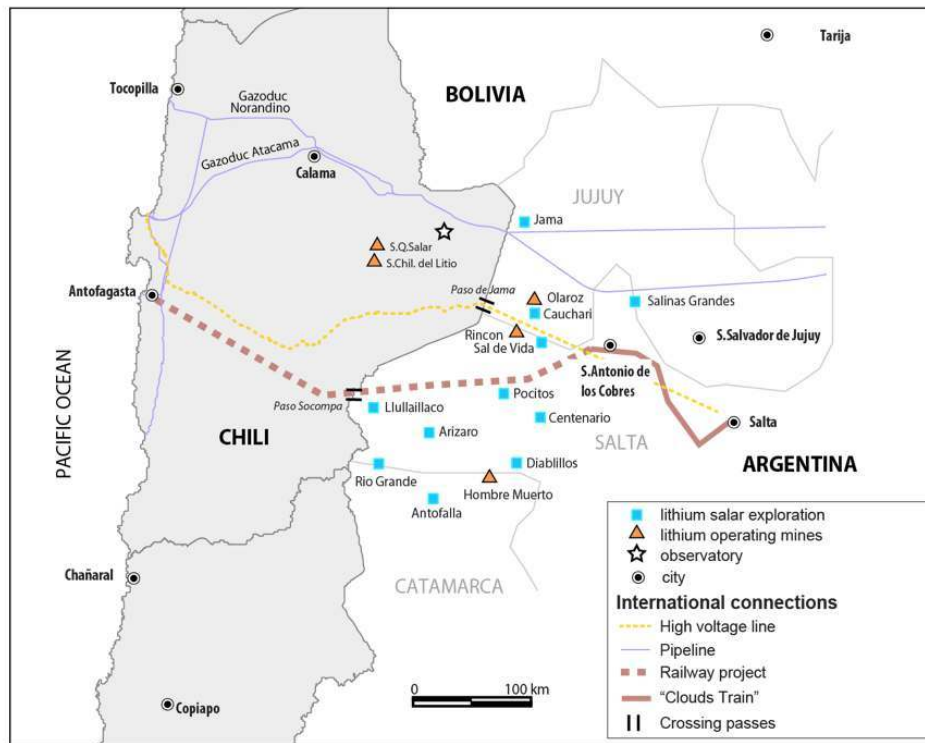
The spatial consequences of 'extractivism'

- 12 Argentina, like other South American countries, is seeing the "re-primarisation"⁷ of its exports, despite the explicit policy of import substitution (Paschoa *et al.*, 2010; Carcanholo *et al.*, 2014; Quenan *et al.*, 2014) that the Kirchner and Fernández governments introduced following the first round of debt restructuring in 2005. This is mostly due to the growth of mining that followed the neoliberal orientation⁸ given to the country's economy at the turn of the century. Cristina Fernández's government rolled back many of the neoliberal policies implemented during the 1990s – for example, under a 2011 bill, currency earned from exports of raw materials must be reinvested in

Argentina. However, the health of the country's economy is still largely dependent on the export price of raw materials and on the transnational corporations that extract them.

- 13 The exploitation of raw materials is disconnected from the domestic value chain but closely linked to world markets. Consequently, the extraction-export model categorises territories according to their reserves of globally sought-after raw materials.⁹ An inherent weakness of this model is that depletion of reserves or changes in world demand can quickly compromise economic growth and engender regional crises (Velut, 2007). Called “*maldesarrollo*”¹⁰ by some, this extractive model can lead to local communities being dispossessed of their territory's riches and natural resources and to the violation of indigenous communities' individual and collective rights (Svampa et al., 2014). In addition, because large mines are archetypal closed spaces, enclaves within a country that are controlled by foreign capital, territorial resources are often extracted via an a-territorial¹¹ production system (Antonelli, 2009). This is the case particularly in Argentina, where the construction of dedicated service infrastructures¹² allows new mining enclaves to be inserted within the territory. As a result, the territories of the Argentinian Andes have become archipelagos of mining operations and export outlets, linked together by transportation routes but partially disconnected from the territory. In most cases, the resource areas explored and exploited by large international groups contain several production sites connected to a main transportation axis along which the mines' production is conveyed to export ports. This is the case for the *salars*¹³ at Cauchari and Olaroz, in Jujuy Province, which are operated by Lithium America,¹⁴ Minera Exar and Sales de Jujuy,¹⁵ which negotiated the building of infrastructure to transport the lithium to the Chilean port of Antofagasta, from where it is exported (fig 2).
- 14 Chile is the world's largest producer of lithium and supplies 40% of the global market thanks to the Salar de Atacama mine.¹⁶ Before agreeing to open the mine, the Chilean company Sociedad Química y Minera¹⁷ (SQM) and the Luksic Group, which export most of their production to South Korea and China, insisted on the need for adequate transportation routes to the Pacific coast. Consequently, the provincial government agreed to upgrade access roads and to re-open the railway line between the port of Antofagasta (Chile) and Salta (Argentina) so that the mine's production could be easily exported to the Asian market. These improved transportation links have resulted in a mountain area that had previously been isolated from the rest of the territory being viewed as a reservoir of raw materials. This example illustrates the way in which territories that had once been peripheral became strategic centres for large multinational corporations. However, as Denoël (2014) notes, this does not necessarily result in much positive development for the surrounding areas due to their disconnection from the mining enclaves.

Fig 2. Lithium mines in the *salars* of northwest Argentina



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- 15 As the examples above show, the spatial system hinges on two points – production sites and export sites – linked by transportation routes. Resource zones generally cover larger areas and contain several production sites linked to a main axis by an arborescence of secondary routes along which the material extracted is transported to processing and/or export sites. The similarities between this spatial organisation and the colonial form of exploitation show that the foundations of resource exploitation within an asymmetric system of exchange have not really changed.¹⁸ Since the turn of the 21st century, Argentina's territorial structure and the accentuation of the disparities between provinces have reflected the imbalances between the world's command centres and the places under their influence. Hence, mountain territories can be considered “segment” territories with “extractivism” as their only competency and whose role is to supply “module” territories with much more complex competencies, often in the form of “competitiveness hubs”¹⁹ or clusters,²⁰ for processing materials extracted upstream and enhancing them for their final technological or industrial use (Perrat, 2006). To date, not a single cluster has formed around a mining area or the mining sector in Argentina.
- 16 These enclave economies accentuate the fragmentation of mountain territories in the sense that production sites are directly linked to the world system, whereas their surrounding territories are so dominated by the production sites that they remain or become peripheral and disconnected from the country's dynamic. This type of economy can damage, or even displace, local communities and cause the demise of other production circuits, thereby disrupting traditionally defined territories and leading to the development of new territorial configurations (Gudynas, 2012).

From 'raw materials' to 'resources': assigning roles to mountain territories

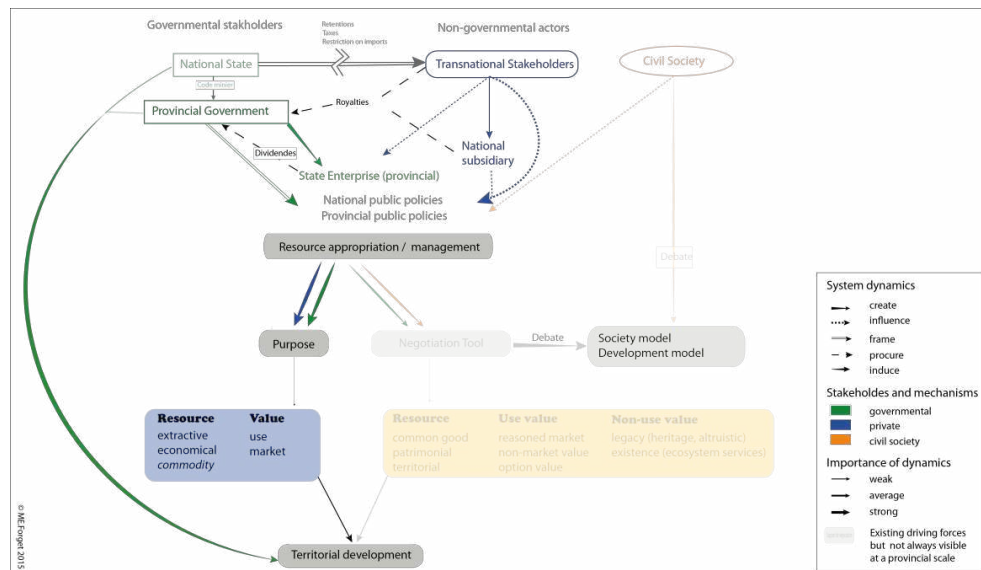
- 17 According to the relational approach, the modalities of territorial development depend on the process by which a territory decides which of its attributes to turn into resources and how this should be achieved (Blot, 2004). Hence, spatial conformations are determined by the balance of power between the actors involved. In Argentina, the emergence of other, non-governmental actors (multinational corporations, indigenous communities, environmental protection groups etc.), whose power tends to increase, means that the national and provincial governments are no longer the only “political agents” involved in this process. Thus, the appropriation and management of resources has become a finality involving a frequently asymmetrical power struggle between the different actors. When civil society is active and participates in the construction process, “resource construction” becomes a tool to negotiate a development model focused on local society and communities. However, Argentina’s focus on extractivism has led to a purely economic view of resources in which territories could be classified as efficacious or “sacrificable” (Svampa, 2009). A territory may be considered “sacrificable” when existing productions are not important enough and population densities are not high enough to compete with the opening of mines. Hence, mining companies often choose such isolated and/or poor areas, which they characterise as places whose sole value comes from their mineral reserves. In so doing, corporations reduce potential conflicts relating to the use of means of production, such as water, energy and land,²¹ and increase their negotiating power. As a result, the international distribution of mining activities is the result of both the availability of minerals and strong social asymmetries.
- 18 Most mountain territories have seen mining develop in this way. Nevertheless, over the past 10 years, new visions of territorial valorisation have emerged and been brought together in order to propose an alternative to the dominant actor. Denoël (2014) outlines four different approaches to territories. First, a territory can be constructed as an “original” territory, that is, a territory centred around its indigenous communities, which are still very present in the north of the cordillera (ILO Convention 169²²). A territory can also be built as an inherited territory, which gives it a legacy value and makes it the duty of current generations to preserve its main characteristics and environment so that they can be handed down to future generations. A territory can also be shaped as a chosen territory in which different actors promote a specific use of its resources. Finally, a territory can be defined as a productive territory, in which case mining projects can damage alternative productions, for example, by monopolising means of production such as water supplies.
- 19 Thus, the way in which a territory is perceived and constructed depends on the values attributed to its natural resources and the way in which these resources are exploited, on all scales.

Territorial trajectories and development models

- 20 The following section presents the trajectories of three provinces – San Juan, Catamarca and Jujuy – and focuses on how the interplay between the actors involved in determining which resources should be exploited and how (national government, provincial

government, transnational corporations, protest groups etc.) has led to the adoption of different development models. Figures 3 to 5 highlight the main processes involved in territorial development for each of the three case studies and break down the system of actors involved and the values accorded to resources in each territory.²³

Fig 3. This system is dominated by the coalition between provincial and private actors. The authorities quickly clamped down on socio-environmental protests by members of civil society. Development has been mostly economic, and the results of investment can be seen in the public infrastructure built in the city of San Juan.



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The San Juan Andes: supplying the globe, but what are the results for local development?

- 21 San Juan is undoubtedly the most openly pro-mining province in the Argentinian Andes. Covering 90,000 km², 80% of which is mountainous, it has attracted 42 metal mining projects (fig. 1). Only three of these mines (Veladero, Gualcamayo and Casposo) were set up to extract gold or silver.²⁴ Construction has begun on a new mine at Pascua Lama, a joint venture between Argentina and Chile, and feasibility studies have been completed for the Hualilán and Pachón projects.²⁵
- 22 The provincial government's decision to develop mining was a political choice in which the appropriation of resources became a finality. This appropriation was facilitated by the legislative measures described at the beginning of this article and primarily involves private actors. Hence, the dominant value accorded to the territory's resources is economic.²⁶ Debate over which resources to develop and how to valorise them, which allows actors to negotiate how resources are used to promote development, appears to be absent, partly due to the failure of civil society to mobilise following three refusals to hold public inquiries at Calingasta, a town close to the Casposo and Veladero mines (Colectivo Voces de Alerta, 2011).
- 23 Nevertheless, the provincial government has attempted to balance this approach to exploiting mineral reserves, which would otherwise be a case of accumulation through dispossession²⁷ (Harvey, 2010), by imposing higher taxes on mining revenues than those

accorded under the national Mining Code.²⁸ These tax revenues are used to generate endogenous development. As an additional but smaller source of revenue, the provincial government also invests in mining projects through a public enterprise called EPSE,²⁹ which negotiates a percentage of a project's profits in exchange for granting concessions. This situation can be considered an example of what some authors call the "consensus of commodities" (Svampa, 2012), that is, accepting meagre benefits from the exploitation of a resource rather than no benefits at all. Consequently, the royalties and dividends that the transnational companies pay contribute little to development mechanisms in San Juan Province.

- 24 The expansion of a territory's energy infrastructure can be used as an indicator of development on a variety of scales, from individual housing to entire "mining districts". Northwest Argentina is poorly served by the national electricity grid (National Interconnected System – NIS) and has one of the lowest rates of household connections in the country. Expansion of the grid occurred relatively late and coincided with the increased demand for energy because of the beginning of mining, which makes up approximately 21% of the energy used in the province (AADERA, 2013³⁰). The Gualcamayo and Casposo mines have been connected to the NIS since 2008 and 2010, respectively, thanks to joint investments by the provincial and national governments and mining companies. In addition to expanding the area covered by the electricity grid, these connections are very cost effective for the mining companies, as they reduce their need for on-site generators, which have to be supplied with diesel by convoys of tankers (photo 1). For example, Barrick Gold has recently installed a 2 MW wind turbine at its Veladero mine, which is too far from the NIS to be connected to the grid, and is planning to build a wind farm with 18 turbines (Barrick Gold, 2013) in order to reduce its reliance on diesel, currently supplied by 10 to 12 tankers a day³¹ from Mendoza, more than 1,000 km away (YPF, 2013).

Convoy of five YPF tankers heading towards the Veladero mine



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- 25 These energy collaborations are part of the transnational corporations' strategy to make themselves "acceptable" (Deshaies, 2011), but they have also had beneficial knock-on effects. For example, they have led the province to strengthen its policy of energy diversification and build the country's first NIS-connected solar power plant, with an installed capacity of 7 MW, at Cañada Honda. Other planned projects will increase installed capacity by a further 40 MW. These initiatives are part of a provincial plan to identify, measure and develop wind-power and solar-power resources.

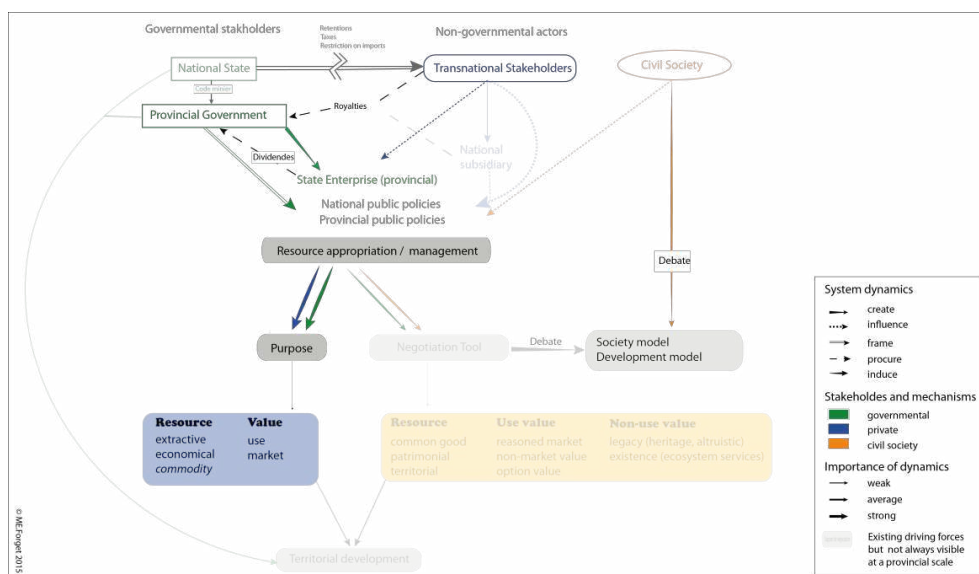
Catamarca, powerful *megaminería* and weak territorial development

- 26 Catamarca Province is notable for the age of its mining investments. When the *Bajo la Alumbra* mine was built between 1995 and 1997, it was the largest foreign investment in Argentina, and it is still the country's biggest gold and copper mine. The construction of infrastructure for the mine created a lot of jobs (4,000), but this stage was short-lived, and employment has since been cut by four-fifths. Minerals from the mine are pumped along a 314-km pipeline to Tucumán, where they are dried before being hauled along the railway line past the Paraná River to San Martín, north of Rosario. They are then exported for further processing. The mining company owns all the interchanges along this route, and there is no connection with other activities (Osatinsky, 2014).
- 27 The development of mining and the province's traditional economic structure, which is based on the direct exploitation of natural resources and in which the primary sector is greatly over-represented (Machado Aráoz, 2009; Osatinsky, 2014), have prevented significant development of the manufacturing, commercial and service sectors, which actually shrank between 1998 and 2002.³² In fact, the opening of the mine has resulted in

some of the territory's smaller towns becoming ghost towns, with others losing their economic vitality and still others seeing the development of unregistered companies and small, ephemeral and illicit businesses (Manzanal, 2000).

- 28 Because the arrival of mining did not lead to the expansion of the territory's energy infrastructure, it has increased the pressure on energy supplies and thereby reduced access to energy for local communities.³³ This competition for energy has increased the economic vulnerability among local people: Some 51% of those living below the poverty line live in houses that are not connected to the electricity grid. Even though the provincial government is deeply involved in mining (the provincial public company *Yacimientos Mineros de Agua de Dionisio* (YMAD)³⁴ operates the Farallón Negro mine), it has not been able to use mining to benefit the territory as a whole.

Fig 4. Cohabitation between government-associated stakeholders and the non-governmental, "multi-centred" stakeholder system in Catamarca Province



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- 29 Consequently, the growth of mining has given rise to a strong protest movement, which began with the fight to stop the *Bajo de la Alumbra* project. The mine's failure to provide social spinoffs, as well as dust pollution from the mine and damage to houses caused by the passage of trucks heading to and from the mine, together with more general discontent about water pollution and the use of toxic chemicals such as cyanide led to protests in Belén and Andalgalá in 2000 (Machado Aráoz, 2009). Mining opponents challenge the appropriation of mineral reserves by outside interests (fig 4), and they argue that they should also be considered non-commercial assets whose value arises from their non-use, rather than solely commercial assets whose management is a finality. This argument has been used to pressure the public authorities to adopt a new development model based on resources as public property.

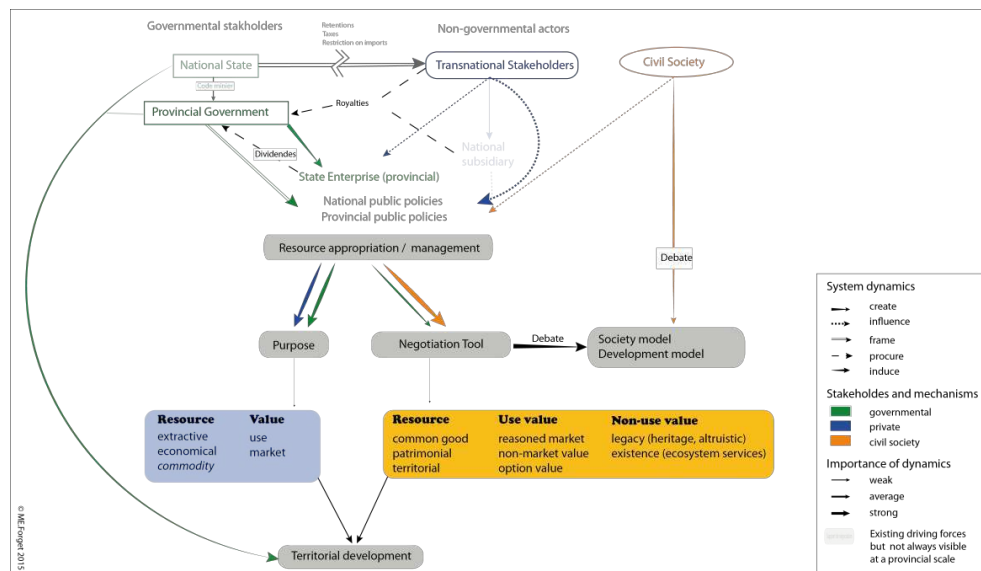
Jujuy, towards the construction of territorial resources?

- 30 Jujuy Province recently began building a mining sector by developing lithium mining.³⁵ Although some actors view the extraction of lithium as a potential boon for development,

environmental protection associations and groups defending the rights of indigenous people are more reticent. Consequently, indigenous rights groups are calling for endogenous development of mountain communities by improving traditional local productive systems such as agriculture and livestock farming. For example, Warmi Sayajsunqo,³⁶ an action group founded in 1995 by Rosario Quispe, would like to see the territory's resources being used to help the Kolla people by creating small entrepreneurial systems and a market for traditional crafts. Warmi Sayajsunqo defends the community's right to keep its land and use it for farming, which goes against the "land-grabbing" practices of transnational corporations (Messerli et al., 2014).

- 31 Here, non-governmental actors play a central role by proposing an alternative vision of development that values resources in relation to the local context. This vision takes into account the ethical and spiritual values of Andean communities when constructing resources, which it considers resources in terms of their non-commercial value, as well as their commercial value (sale of local products, farming of the land, use of solar energy) (Salin, 2007, Aranda, 2012) (fig. 5).

Fig 5. The fabric of non-governmental actors in Jujuy Province is more complete and complex than in the other provinces studied. The resulting multi-perspective view of the territories resources, which takes into account both their non-commercial and commercial values, favours more comprehensive territorial development.



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- 32 Solar energy is an abundant resource in the cordillera and provides another way of harnessing the resources of mountain territories to provide development that meets local needs, facilitates universal access to energy and improves health, education and communication. The provincial government has tapped this resource for over 15 years by building decentralised solar power plants (photo 3) under the national government's PERMER project.³⁷ Hence, in contrast to San Juan Province, the building of energy infrastructures and the development of local solutions have been largely independent of the mining industry.

Individual, roof-mounted photovoltaic installations in an isolated village



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- 33 Other development initiatives guided by associations have seen the light of day. ProYungas, which was originally an environmental protection association, created the brand Proyungas to market local products via short supply chains. Initiatives that were initially launched to find outlets for products from the cordillera and thereby stop the rural exodus have been mirrored by the development of global businesses such as tourism, which is growing rapidly in the Quebrada de Humahuaca.³⁸ Local associations, supported by the provincial government, which helped pioneer “ethno-tourism” by inviting tourists to discover local cultures and “nature” tourism based on the area’s exceptional geology and scenery (Bernard et al., 2013), are trying to construct a “territorial tourism resource” as an alternative to mining (Sacareau, 2011). The province’s indigenous cultural resources and “latent natural” resources were revealed when the territory was declared a “site of national interest” in 1993, and, most importantly, when it was added to the UNESCO World Heritage list in 2003. Consultations with local people during the World Heritage application showed their desire to develop a form of tourism that included local communities and allowed them to reap the benefits of local craftsmanship. However, the rapid growth of tourism quickly led to its appropriation by private companies, which raised the price of real estate, increased pressure on water resources and dispossessed the local people (Dumoulin et al., 2011).

Concluding thoughts

- 34 Argentina’s mining industry has grown rapidly since the beginning of the 21st century. As a result, the territories of the Andean cordillera, which had been considered peripheral, have found themselves at the centre of transnational corporate strategies and directly connected to the networks of globalisation. Power relations are clearly asymmetric, with the national government seeing transnational corporations as an important source of direct foreign investment. Locally, foreign investment is a contentious issue because its impacts on the area’s vulnerable mountain communities are often negative. Local

communities find themselves being dispossessed of land they have traditionally used but to which they have no legal title and may see their water supplies, for which they generally have no official rights, severely curtailed by upstream pumps feeding the mines. This feeling of dispossession has led to a growth in militancy and protests, on both the local and national levels.

- 35 Even if these protests have not resulted in a more symmetrical balance of power, they have promoted another vision of local development that differs from the predatory approach followed by many transnational corporations and permitted by the weakness of national and provincial government regulations (Romero et al., 2012). The pursuit of short-term economic gains at the cost of long-term territorial development has led to the formation of a national network of self-appointed assemblies whose goal is to promote another type of development centred on improving living conditions and socio-environmental justice rather than focusing exclusively on economic indicators. The trajectories of the three provinces illustrate how differences in the interplay between actors can have an impact on territorial development. In the case of San Juan, development in the field of energy has been relatively positive, as it has created a network that meets energy demands and has facilitated the launch of a number of innovative renewable-energy projects. In Catamarca Province, strong mobilisation by civil society has resulted in an approach to development that considers resources in terms of their non-mercantile value, as well as their mercantile value. Finally, in Jujuy Province, a network of associations and a strong community identity have opened up new development pathways, most notably by supporting traditional activities and developing tourism. Mountain tourism is not the dominant model for Andean territories, but “nature tourism” based on the beauty of the landscape, mountaineering and other mountain sports is starting to become more important. Hence, an alternative development route has been found by building a tourism sector that embraces globalised values, notably by protecting areas of exceptional natural beauty. Parks to protect the environment and biodiversity are another (albeit still very limited) use of the mountains. All these initiatives respond to the demands of globalised lifestyles and for environmental sensitivity.
- 36 Whatever the case, a strong desire to defend one’s territory combined with the emergence of the environment and identity as important issues have led to new ways of viewing a territory’s value that brings together the demands of communities and indigenous peoples and has given rise to a growing protest movement. Thus, actions by civil society to promote the notions of “communal property”, “socio-environmental justice” and “living well” (Denoël, 2014), as well as the increased strength of non-governmental actors, have produced a territorial-economy “turning point” in the way resources – whether they are raw materials, a landscape or cultural artefacts – are perceived.

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NOTES

1. The Mining Investment Act (Ley 24.196 de Inversiones Mineras) was passed in 1993.
2. Código de Minería, 1980 (Ley 22.259)

3. Jujuy inherited the state of Susques, Salta inherited Pastos Grandes and San Antonio de los Cobres, and Catamarca inherited Antofagasta de la Sierra.
4. A guaranteed, stable tax regime for 30 years, reduced import duties on mining equipment, as well as royalties capped at 3% of the “run-of-mine” (extracted, transported and/or stored but not processed) value of the minerals extracted. This is the value at the end of the first stage of production, after deduction of operating costs involved in bringing the mineral to this stage, except for costs inherent in its extraction.
5. Dirección Nacional de Minería de la Secretaría de Minería du Ministerio de Planificación Federal, Inversión Pública y Servicios de la Nación, 2011
6. Unprocessed raw materials
7. The term “re-primarisation” of exports is used here to describe a substantial increase in the export of raw materials compared with an economy’s total exports. This subject has been part of Argentina’s political debates and history since the 19th century. Argentina was given its role as an exporter by its imperial rulers and dominant classes: “The fruits of the earth would have no value without industry” (Manuel Belgrano, September 8, 1810)
8. The term “neoliberalism” is used in the sense of the opening up of the Argentinian economy to foreign capital following the change from a highly nationalised economy to an economy based on direct foreign investment.
9. In the 1980s, only a dozen chemical components were needed to make an electronic chip. Today’s high performance chips require more than 60 different chemical components (NRC, 2008). A similar observation can be made in the automobile industry – the cars of the future will require a wide range of materials, such as rare earth minerals for the magnets in both auxiliary and drive motors.
10. “Bad development” in English.
11. In the sense that all large mining projects operate in a similar way, no matter the characteristics of the areas in which they are situated.
12. Transportation, energy, water.
13. A *salar* is a salt plain consisting of a more or less ephemeral lake of varying outline and whose sediments are composed mostly of salts that often contain high concentrations of lithium.
14. A Canadian company whose main associates are the automobile subcontractor Magna and the Japanese company Mitsubishi.
15. ¹⁵ A subsidiary of the Canadian company Orocobre Limited, which owns 67% of the firm. The remaining 33% is owned by the Japanese company Toyota (25%) and the provincial public company Jujuy Energía y Minería Sociedad del Estado (JEMSE, 8%).
16. South America’s reserves of lithium occur in a “triangle” between Argentina, Bolivia and Chile. This triangle contains 70% of the world’s reserves.
17. The world’s largest producer of lithium thanks to its deposits near Antofagasta, in northern Chile.
18. For Spain’s needs after the conquest and then for the “Global North” after the formation of nation states.
19. The combination in a given geographical area of companies and public and private training and research centres working within a loose partnership in order to create synergies around joint innovation projects (Perrat, 2006).
20. The notion of “cluster” covers different situations ranging from a veritable system of local productive interactions to a geographically widespread network of companies to a simple co-location of actors (Perrat, 2006).
21. Because mineral concentrations in opencast mines are often quite low, mines tend to cover vast areas. For example, in 2001, Troy Resources, which operates the Casposo mine, bought 72,000 ha of land from San Juan’s old families in order to cover the area likely to contain mineral deposits. Such acts raise the issue of foreign companies’ appropriation of real estate.

22. Convention no. 169 is a legally binding international instrument open to ratification that covers the rights of indigenous and tribal peoples.
23. Compañía Minera Colorado S.A, which comprises Plata Mining (USA) and Minera Metatrón (Arg), and Glencore (Zug canton, Switzerland).
24. Barrick Gold, Yamana Gold (Canada) and Troy Resources (Australia).
25. The level of transparency shows the importance of the mechanisms at work in the different provinces.
26. That is, putting resources to mercantile use.
27. Accumulation by dispossession is characteristic of powerful Western, neo-liberal, capitalist policies that result in wealth and power being concentrated in the hands of a small number of people, which dispossesses the majority of its commonly held property, wealth and land.
28. Royalties are often lower than 3% because they are set during negotiations between companies and the provinces, which are generally poorly prepared for this type of negotiation. For example, Barrick Gold pays royalties of just 1.7% for the Veladero mine (Colectivo Voces de Alerta, 2011). In addition, royalties are calculated solely on the basis of production statistics provided by the company with no independent audit to check the declared tonnage.
29. Energía Provincial Sociedad del Estado
30. Total electricity consumption in San Juan, including all types of consumers, was around 2044 GWh in 2013, an increase of 34% in four years (Ministerio de Economía y Finanzas Públicas, 2009; AADERA, 2013).
31. That is, approximately 9,000 m³ of fuel and 240,000 l of lubricants every month.
32. The corollaries of 18% growth in the mining sector are contractions of 10% in the industrial sector and of 7% in the tertiary sector.
33. For example, in 2003, the Bajo la Alumbrera mine used approximately 765 GW of electricity, whereas the rest of the province used a total of 450 GW (Machado Aráoz, 2009).
34. With participation from Catamarca Province, Tucumán National University and the national government since 1958, thanks to Abel Peirano of the Institute of Geology at the University of Tucumán, who discovered the Farallón Negro deposit. Since 2008, 20% of YMAD's profits have been given to national universities. Some of them, such as Cuyo or Buenos Aires, have declined this subsidy because they refuse to take money from industries that damage the environment and the lifestyles of indigenous people living in the new mining territories.
35. Mining has a long history, as the *Pirquitas* mine has been in operation since the beginning of the 20th century, but this mine has not generated territorial development or triggered the growth of a mining sector.
36. Which means the “the persevering women” in Quechua.
37. *Programa de Energías renovables para mercados rurales* (Renewable Energies Program for Rural Markets), put forward by the Secretary of State for Energy.
38. This valley in the northeast corner of Jujuy Province forms part of an important cultural route, the Inca Trail, which follows the spectacular Rio Grande for 150 km. Evidence found here shows that the trail has been a major trade route for around 10,000 years.

ABSTRACTS

Argentina's mining industry has grown rapidly in recent years, making the sector an essential part of the country's economy and placing the Andes at the centre of numerous economic, political and social issues. This article examines the spatial distribution of mining activities and the role attributed to the mountains of northwest Argentina. Exploiting these territories as reservoirs of raw materials was uncontroversial at the beginning of the century; however, this approach is now being contested because it leads to little territorial development. Latin America's renewed focus on primary industries involving the extraction and export of unprocessed natural resources can be viewed as a step back to colonial-style exploitation. As such, it raises questions about North-South relations and the development of mountain territories, which are often peripheral, poor and sparsely populated. Our research examines the territorial-development trajectories of three provinces – San Juan, Catamarca and Jujuy – and analyses how interactions between governmental and non-governmental actors affect a territory's approach to constructing and exploiting its resources. Questions about the way in which these interactions shape the development of mountain territories have led to alternative models that take into account the need for territorial development to be built locally.

INDEX

Keywords: mining, extractivism, territorial development, globalisation, environment, Andes, Argentina

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